BASIC FORMULAE

$\frac{d}{dx}(x^n) = nx^{n-1}$	$\frac{d}{dx}(a^x) = a^x log a$
$\frac{d}{dx}(\log x) = \frac{1}{x}$	$\frac{d}{dx}(e^x) = e^x$
$\frac{d}{dx}(\sin x) = \cos x$	$\frac{d}{dx}(\sinh x) = \cosh x$
$\frac{d}{dx}(\cos x) = -\sin x$	$\frac{d}{dx}(\cosh x) = \sinh x$
$\frac{d}{dx}(\tan x) = \sec x^2$	$\frac{d}{dx}(\tan^{-1} x) = \frac{1}{1+x^2}$
$\frac{d}{dx}(\cot x) = cosec^2 x$	$\frac{d}{dx}(\sin^{-1} x) = \frac{1}{\sqrt{1-x^2}}$
$\int x^n dx = \frac{x^{n+1}}{n+1}$+C	$\frac{d}{dx}(\cos^{-1} x) = -\frac{1}{\sqrt{1-x^2}}$
$\int e^x \, dx = e^x + C$	$\int \frac{1}{x} dx = \log x + C$
$\int \sin x \, dx = -\cos x$ $\int \cos x \, dx = \sin x + C$	$\int a^x dx = \frac{a^x}{\log a} + C$
$\int sec^2 x \, dx = tan \, x + C$	$\frac{dx}{x^2+a^2} = \frac{1}{a}\tan^{-1}\frac{x}{a} + C$
$\int \sec x \tan x \, dx = \sec x + C$	$\int cosec^2 x \, dx = -\cot x + C$

$\int \sinh x \, dx = \cosh x + C$	$\int \frac{dx}{a^2 - x^2} = \sin^{-1} \frac{x}{a} + C$
$\frac{d}{dx}(cosec\ x) = -cosecx\ cotx + C$	$\int \cosh x \, dx = \sinh x + C$
$d(uv)$=udv+ $v\ du$	$d\left(\frac{u}{v}\right)=\frac{v\ du - u\ dv}{v^2}$, $v \neq 0$
$\int e^{ax} cosbxdx = \frac{e^{ax}}{a^2 + b^2}[acosbx + bsinbx] + C$	
$\int e^{ax} sinbxdx = \frac{e^{ax}}{a^2 + b^2}[asinbx - bcosbx] + C$	
$\int uv = uv_1 - u'v_2 + u''v_3 - \ldots\ldots$	